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Krah

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(54) **INTERACTIVE HOLOGRAPHIC DISPLAY DEVICE**

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(58) **Field of Classification Search**

USPC 345/173, 175; 359/1–35

See application file for complete search history.

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(57) **ABSTRACT**

A display apparatus configured to produce an interactive three-dimensional holographic image is disclosed. The display apparatus can include one or more coherent light sources configured to produce one or more beams, based on obtained image data of an object to display, and a lens assembly configured to direct the one or more beams to form a holographic image of the object. The lens assembly can include a collimating lens and a lens capable of beam steering one or more beams, including a micro-lens assembly with at least one micro-lens configured to generate a plurality of beams associated with a plurality of desired viewing angles. One or more optical sensors can be configured to obtain information regarding whether an interactive device interrupts the one or more beams, and a processor unit can determine a location of the interactive device with respect to the holographic image.

25 Claims, 13 Drawing Sheets